



Ross High School: Mathematics Department

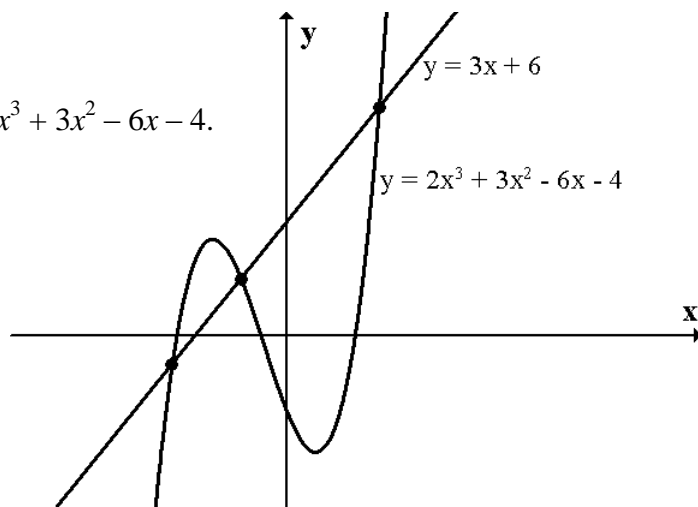
Higher Mathematics: Homework 9

1.

(a) Show that $x = 2$ is a solution to the equation $2x^3 + kx^2 - 2kx - 16 = 0$. (3)

(b) Hence find the range of values of k for which all the roots of this equation are real. (4)

2. A curve has equation $y = 2x^3 + 3x^2 - 6x - 4$.



(a) Show that the line $y = 3x + 6$ intersects this curve at the point $(2, 12)$. (4)

(b) Find the other points of intersection of the curve and the line $y = 3x + 6$. (4)

3. Find the equation of the line ST , where T is the point $(-2, 0)$ and angle STO is 60° (3)

